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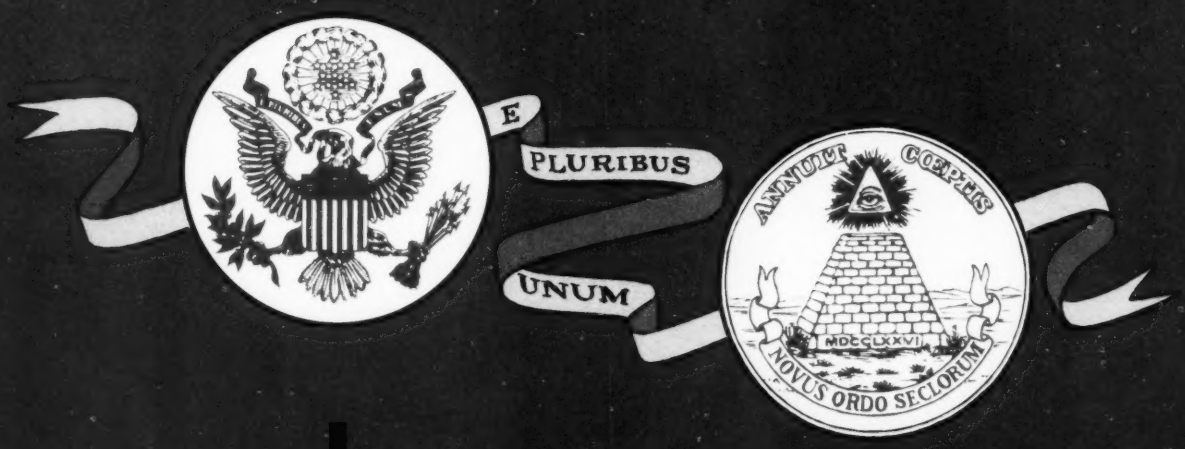

Wondrous Wheel-Chair Workmen

Our Safeguard Against Betrayal

Whose Cash for School Injuries?

More Guaranteed 'Golden Years'

Here's Hope for Commuters

They Put the Proof in Pictures

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BACK COVER—*Symbol of the Nation's Sovereignty*
Department of State

OUR COVERS

AMERICANS are rediscovering and appreciating anew the Great Seal of the United States (front cover) following the exposé of how Russia had been using a replica of the seal for espionage purposes. Both the obverse and reverse of the seal as shown on our cover will be found on the back of every $1 bill which citizens are carrying in their pockets right now.

August lends added luster to the seal, for on August 10, 1776, the motto, *E Pluribus Unum*, was proposed by Benjamin Franklin's committee appointed by the Contmental Congress to create a symbol of sovereignty for the Nation. (*Annals*, Page 15.)

Even with its 184 years, the Great Seal is youthful in heraldic annals. Usage of seals goes back in antiquity to China, Egypt, Greece, Rome and other places.

A modern-day usage of the Great Seal (back cover) especially meaningful to the insurance industry is for authenticating the annual presidential proclamation of National Fire Prevention Week in October. ⊙

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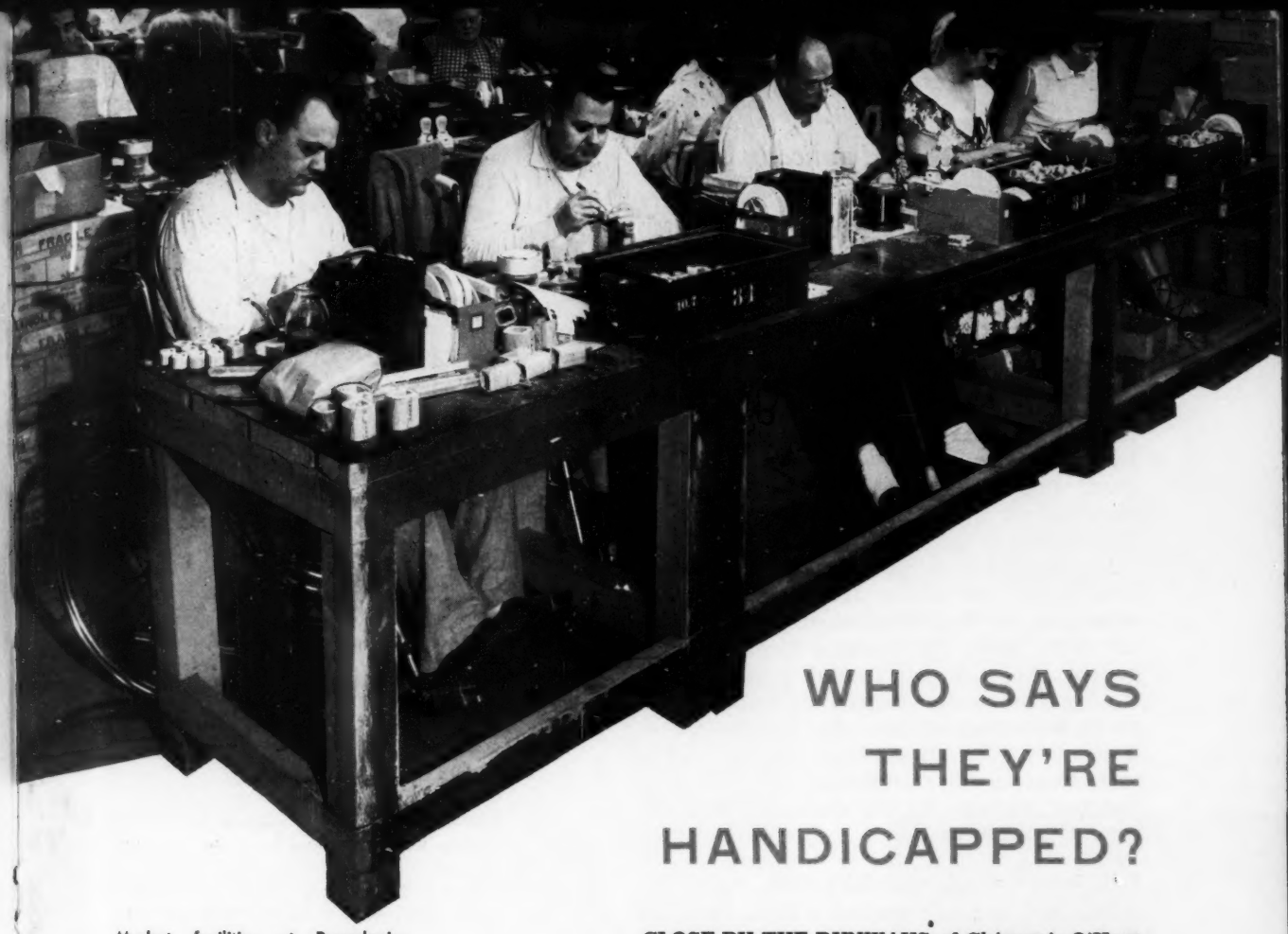


Modest facilities at Paraplegics Manufacturing Company's old plant give little hint of the quality work turned out by these remarkable "handicapped" workers, 100 strong.

WHO SAYS THEY'RE HANDICAPPED?

This unique firm proves disabled workers can stand on their own feet in the business world.

CLOSE BY THE RUNWAYS of Chicago's O'Hare International Airport, the shadows of outbound jet liners sweep across the low silhouette of a company whose employees are going places in wheel chairs.

Later this month they will roll themselves into the new plant to embark Paraplegics Manufacturing Company on its second decade of hiring physically impaired workers—exclusively. This unique firm is now bursting at the seams in two small plants in nearby Franklin Park, Illinois, where it struggled into existence 10 years ago as an act of faith and ignorance.

"If we had been smart businessmen, I don't think we would have dared start this company in the first place," says Pamco's 37-year-old president, Dwight D. Guilfoil, Jr., who has probably done as much as any other person to prove that people with physical disabilities can hold their own in the business world.

More than 100 disabled workers are now employed by Pamco at standard industry wages, and they accept no charity from anybody. They are men and women who range in age from

21 to 76; in disabilities from arrested tuberculosis to heart ailments to complete paralysis from the waist down.

Yet their abilities far outweigh their impairments, and their skills have made the firm one of the most versatile contract manufacturers in the world. They can—and have—put together complicated controls for the Jupiter missile, assembled burglar alarms for several guard companies, made special test equipment for U. S. Naval Ordnance, and built to watchmaker's standards a group of miniature assemblies smaller than a pack of cigarettes.

In the main, they work with standard tools and require few special facilities other than wide aisles for their wheel chairs and a sawed-off water cooler for drinking from a sitting position. Yet their safety record is so good that the firm now receives better than average rates on its workmen's compensation insurance, and is able to provide life insurance benefits on the same basis as other companies that hire only "normal" workers. By any standards, they are a remarkable crew.

Polio Takes a Hand in Guilfoil's Plans

The story of how Paraplegics Manufacturing Company came into being goes back to the summer of 1943, when President Guilfoil was better known as Staff Sergeant Guilfoil in the U. S. Air Force. He had enlisted shortly after Pearl Harbor, trained as an aerial photographer, and was on a train to a port of debarkation in California when he was struck by a terrific pain in his neck and spine, and was rushed to an Army hospital in Kansas City. He was never to walk again. He spent the next two years recuperating in various hospitals from what the doctors finally diagnosed as a combination of polio and spinal meningitis.

"I was probably the most despondent person you'd ever want to meet," he recalls. "My wife came down to see me and I was ready to tell her to go make another life for herself because there wasn't much left of me. But of course she would have no part of any such talk."

By the time he was discharged in 1945, his confidence had returned, and he tried to make a go of it in his pre-war profession as a commercial artist. But polio had affected the coordination of his hands and paralyzed both legs,

Andrew Kowsky operates a standard hand-fed lathe efficiently despite loss of a leg. Pamco finds jobs to fit the physical abilities of its workers, a reversal of the usual hiring procedure.

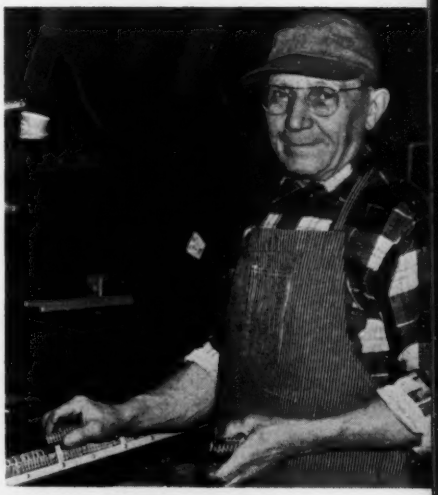
Many employees drive their own autos to work, help each other with parking problems when the lot gets crowded. They roll their wheel chairs directly into the plant through a side entrance.

Guilfoil talks over a new contract with his top assistants, (l. to r.) Quality Control Manager Irvin Pryble, Production Manager Forrest Haley, and Sales Director Harry Bendtsen.

John Meck and Staff Photos

Herbert Johnson, a polio victim, uses skills learned at Pamco to perform complicated wiring and assembly work on paper feed controls for a printing press. He now has seven years experience.

This was a proud moment for the family when Guilfoil received the President's Trophy from Vice President Nixon in May as "Handicapped American of the Year." He was cited for service to other impaired workers at Pamco and elsewhere.



Age also can be a handicap at most firms, but not at Pamco. Alexander Glegoroff is 76, has a production record 25 per cent higher than industry standards.

New plant, to open this month, is designed for wheel chairs, has facilities for on-the-job training and rehabilitation.

robbing him of the skill required of a good illustrator.

"I stuck it out for about two years before I recognized that there just weren't enough groceries on the table," he said, "and by then we had three children."

Guilfoil worked for the next two years as a clerk for the Veterans Administration, but his thoughts kept going back to the plans and dreams he and his fellow paraplegics had discussed in the hospital wards at Hot Springs; plans for associating to pool their resources and show the world they were not yet ready for the rubbish heap.

Seventy Paraplegics Launched the Venture

The actual idea for starting an electronics plant came one day in 1950 when another paraplegic dropped over to see the wide doors and ramps Guilfoil had built in his home to accommodate his wheel chair. They contacted other paraplegics to help finance the venture, and about 70 of them responded with amounts ranging from $50 to several thousand. Altogether, they were able to scrape up about $25,000. So they rented a building, put about a third of the 70 stockholders on the payroll, and optimistically opened the doors of Paraplegics Manufacturing Company with what Guilfoil calls "the naive belief that all we had to do was set up a plant in order to start doing business.

"We had all kinds of encouragement from other businessmen, but few of them had any work for us during those first few months," Guilfoil recalls. The big break came when the struggling young company caught the attention of the late David Levinger, a vice president of Western Electric, who gave Pamco its first chance to do competitive work on a rush contract for fighter plane communication systems.

Western Electric's prestige soon broke the ice and brought in other contracts, but an ill-fated attempt to manufacture and sell high fidelity equipment almost brought about the firm's downfall in 1955. That's when Guilfoil moved up from vice-president to president. He soon had reorganized the firm as a fast-moving, versatile contract manufacturer ready to tackle almost anything electrical, electronic or mechanical that could be brought inside the plant doors.

Some employees come to Paraplegics with skills they have learned at other places, but many others have taught themselves on the job or by taking technical courses paid for by the company. Nearly all are stockholders in the firm, and are currently receiving semi-annual dividends of 50 cents a share. Many workers also receive a wage-incentive bonus based on profits. Last year the firm grossed close to half a million dollars, and earned $23,987 after paying $14,528 in federal taxes.

In his approach to both prospective customers and employees, Guilfoil has always made it clear that Paraplegics Manufacturing Company is strictly a profit-making enterprise, not a "sheltered workshop" to provide charitable assistance for the handicapped. He strongly believes that physically impaired persons should be considered on their individual merits, and has traveled more than 75,000 miles in the past two years to help persuade other employers to adopt the same policy.

"I hear all the time that firms can't afford to hire impaired workers because their insurance rates would go up," he adds. "It just isn't so, because the rates are based on a company's hazards and accident experience, and persons who have already lost the use of part of their bodies are more careful about what they have left than the average worker."

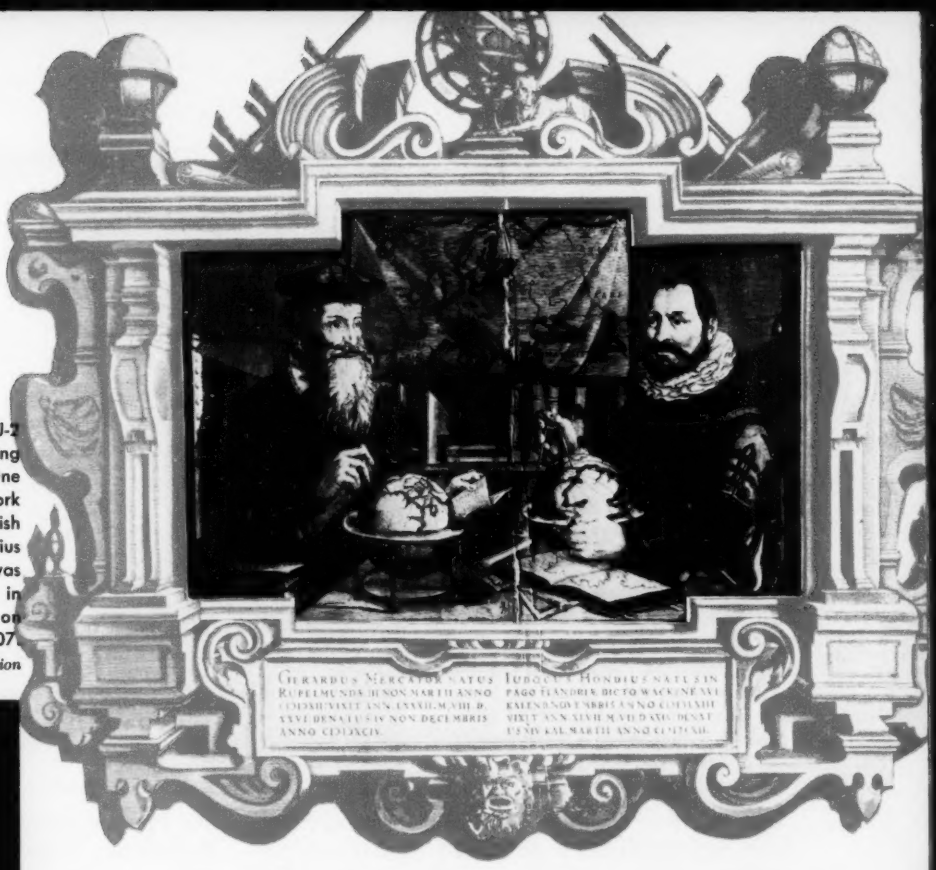
Ironically, the very first claim filed under the firm's workmen's compensation insurance was by the only fully able-bodied worker in the whole plant.

Next Goal: Twice as Many Jobs at Pamco

Guilfoil believes more firms will begin accepting disabled workers as these facts are brought home to them. He has personally helped place 34 such workers with other Midwestern companies in the past few months.

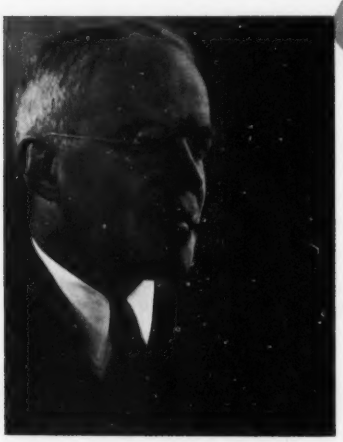
"Maybe in 20 years there won't be need for a company such as ours," he says with approval. But in the meantime, his goal is to double the number of jobs available at Paraplegics when the firm moves into its new plant this month near O'Hare airport, and he is now energetically trying to round up enough new contracts to provide the extra work.

As the firm heads into its second successful decade, both Paraplegics Manufacturing Company and its 37-year-old president are clearly going places despite their unusual means of locomotion. ⊙



Long before spy planes such as the U-2 were in existence, men were mapping the world with uncanny accuracy. One of the first world maps was the work of Gerhardus Mercator (left), Flemish geographer, in 1538. Jodocus Hondius (right), globemaker and engraver, was also active in charting the world in this era. "America" first appeared on the world map scene away back in 1507.

Aero Service Corporation



Allen W. Dulles, director of the CIA, has spent more than 40 years in the field of espionage. During World Wars I and II, Dulles was placed in charge of secret agents working in Germany. His most trying task at present is to direct the gathering of information from inside the Soviet Union's Iron Curtain. President Eisenhower refers to Dulles's work as "distasteful but vital" to maintain national security.

SEEKERS AFTER SECURITY

Our CIA staff, formed after Pearl Harbor, looks and listens to head off another surprise attack.

DON'T TRY TO TELL Allen W. Dulles that the Iron Curtain is just a figure of speech. He has probably spent more time looking for openings in the Kremlin's tightly woven curtain of security than any other individual.

Dulles, brother of the late Secretary of State John Foster Dulles, is director of the Central Intelligence Agency. The agency spends a major portion of its time trying to obtain reliable information on activities inside Russia while at the same time keeping Soviet agents as ill-informed as possible about U. S. functions.

What makes Dulles's job one of the most trying positions in the government is that the American intelligence agents are working at a disadvantage. Russia's spy network is by far the world's largest, with espionage agents in all of the major countries, including Russia, where a close watch is kept for disloyalty among the Soviet people. Another advantage that Soviet agents

On September 22, 1776, Captain Nathan Hale, the "hero-martyr of the American Revolution," faced his hanging after being captured behind British lines while disguised as a school teacher.

Chicago Historical Society

have is that much of this country's scientific and technical data is published regularly in the American press. In Russia, this same information is classified as highly secret, and that figure of speech, the Iron Curtain, helps keep it that way.

Head of the CIA since 1953, Dulles has some 40 years of espionage work behind him. During World War I, he directed U. S. intelligence in Switzerland. He was responsible for a group of American agents working inside Germany in World War II. His reputation in the field of intelligence prompted a Russian newspaper to write of him:

". . . if the spy, Allen Dulles, should arrive in Heaven through somebody's absent-mindedness, he would begin to blow up the clouds, mine the stars, and slaughter the angels."

President Eisenhower more accurately described Dulles's espionage work as a "distasteful but vital necessity."

The Central Intelligence Agency was created by Congress in 1947 to "prevent another Pearl Harbor." Many government officials felt that the devastating attack could have been prevented had the information then known about Japan been coordinated by a single agency.

Part of the complex of departments within the federal government, the CIA is the structure which insures that information flowing to the President and his principal advisers on foreign policy (the National Security Council) is consistent and complete. Dulles is the chief counsel to the President and the security council on all matters of intelligence relating to the national security—sort of an insurance man's insurer in that he and his agency are the nation's first line of protection against enemy attack.

Acting in conjunction with the Intelligence Board, Dulles makes recommendations to the security council concerning the intelligence structure of the government as a whole. The board consists of heads of the intelligence units of the Army, Navy, Air Force, State Department, Atomic Energy Commission, plus representatives of the Federal Bureau of Investigation and the Joint Chiefs of Staff.

Because of the highly secret material the CIA handles, the agency neither confirms nor denies stories printed in the press, whether good or bad. The CIA never identifies its personnel, except for a few in its top echelon, and will not discuss its budget, methods of operation, or sources of information. Espionage is legal by international law, but no law protects a captured spy. Death is the usual penalty for wartime spying.

Although the CIA is a relative youngster among governmental agencies, it appears that

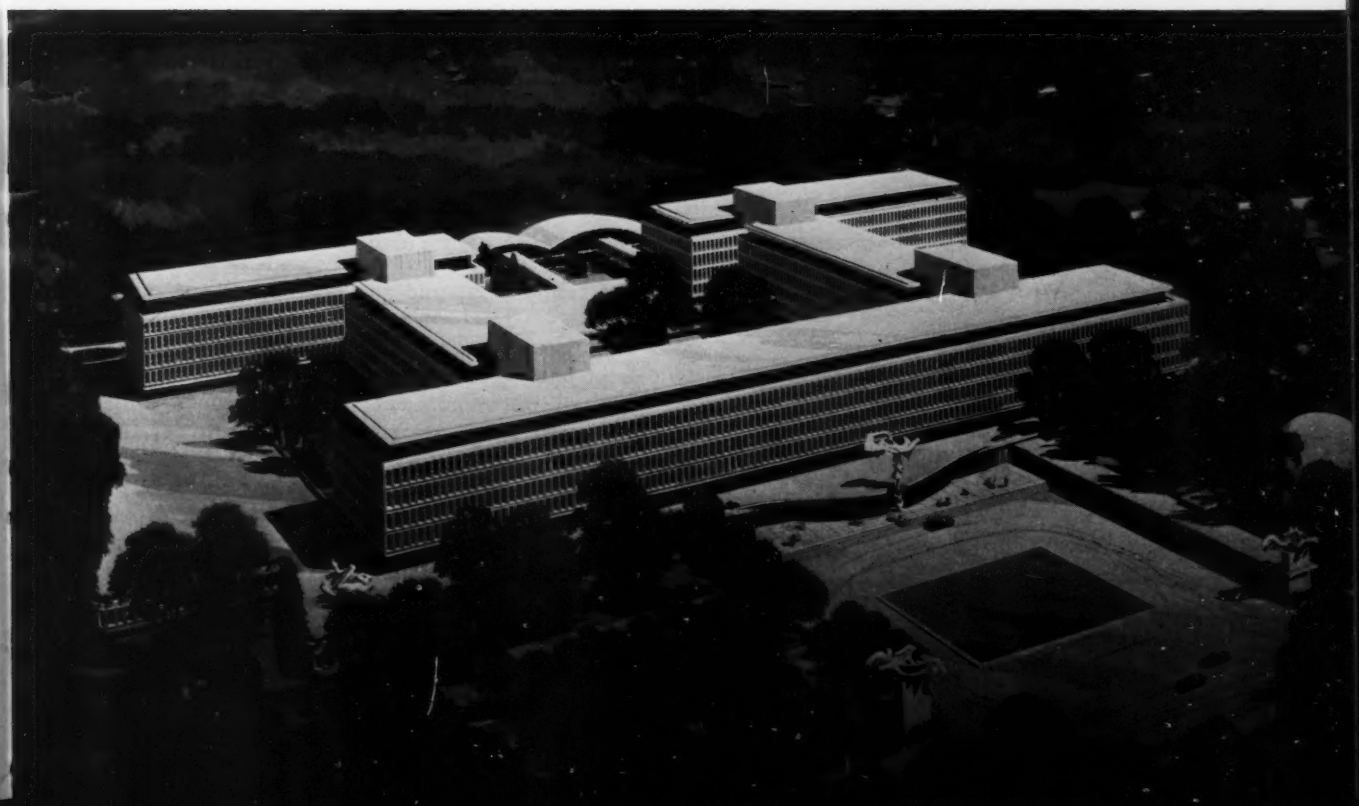
it will be around for some time to come. A new $46 million headquarters is being readied for the agency at Langley, Virginia, just outside Washington, D. C. The seven-story structure, located on a 140-acre site along the Potomac River, will be completed late next year. Housed in the new building will be the most modern of paper-carrying devices, designed primarily for the rapid movement of the tons of correspondence the agency receives each year. One of the CIA's most time consuming duties is that of studying foreign literature—from daily newspapers to theater programs—in an effort to winnow out helpful intelligence data.

Typical of the type of material that the CIA finds encouraging is a letter written by a Soviet citizen to a Moscow newspaper. In his letter, the citizen complained that he was more interested in new shoes than he was in Sputniks. He pointed out that his shoes were four years old and that they wouldn't have lasted that long had they not been of a Western brand. The newspaper printed the letter, calling the writer an earthworm who was incapable of understanding the higher flights of the Communist way of life.

Espionage tactics in the United States have changed considerably since Nathan Hale offered to penetrate British lines for the American Continental Army in 1776. Disguised as a school teacher, Hale was discovered and promptly hanged. There are still CIA agents masquerading in various capacities abroad, but for the most part, the cloak-and-dagger spy has been replaced by modern electronic techniques. For example, the U. S. launched a "spy-in-the-sky" satellite last May designed to detect missile firings in Russia. Radar equipment is also used to observe missile launchings and other air activity in the Soviet Union. Powerful listening devices pick up Russian radio broadcasts, a major source of knowledge for the CIA.

If information going through the CIA headquarters points to a possible attack on this country, the agency would immediately call an Intelligence Board meeting. This meeting would review the material and instantly make a report to the President and the National Security Council. The speed with which this vital information is relayed to top officials is the ultimate in testing the effectiveness of the CIA. Director Dulles feels certain that his organization can "prevent another Pearl Harbor." That's superb insurance by any standard! ⊙

New $46 million headquarters of Central Intelligence Agency is being readied for occupancy late in 1961 at Langley, Virginia, a few miles outside of Washington, D. C., where agency operations are presently located.



Insurance ingenuity helps keep this industrial workhorse under tight rein.

THEY TAME DYNAMITE

HYDROGEN BOMBS have stolen the thunder from conventional explosives as weapons of war, but the workhorse of peacetime blasting is still the old-fashioned rockbuster called dynamite.

Nearly three million pounds of it are blown up every day to build the nation's roads, mine its coal and ores, and rearrange its rocky face to suit our convenience. Carelessly used, every pound is potentially lethal. Yet a whole series of blasts were detonated safely underneath a theater while 2,500 persons were watching a movie a few months ago in Rochester, New York.

Liberty Mutual

Insurance engineers Tom Harrison and Freddy Taymans measure blast vibrations with the accelerograph, an ingenious device invented by Liberty Mutual's chief engineer, Frank Crandell.

Such daring precision in the use of explosives is a product of years of safety efforts—and mutual insurance has made many contributions to it. In the front lines are the insurance engineers who go on the job to size up hazards and help contractors devise safeguards.

Sometimes their work involves as much psychology as it does engineering, particularly when nearby property is endangered. On the Rochester job, for example, the insurer's safety engineer advised the contractor to tell the townspeople all about his blasting plans in advance—a departure from the once widely-held theory that such publicity only invites trouble from irate citizens. There were a few nervous whispers in the audience when the blasts went off, but not a soul got up and left.

Not all contractors have been so well-received. After a recent bridge job in Michigan, nearby property owners filed 90 lawsuits against a subcontractor, claiming his blasting had cracked the plaster in their homes. There was no doubt that the cracks existed, but the contractor's insurer finally was able to prove that they had resulted from natural causes such as settling of the foundations and shrinkage of the timbers. As one veteran insurance engineer put it, "People simply don't know their own property. All buildings have cracks in them if you look closely enough, but most owners don't see them until a blast creates a startling noise and rattles the dishes."

Insurance engineers try to nip this kind of trouble in the bud by making a survey of all exposed property before the blasting starts. They usually talk with the owners, explain why the blasting has to be done and assure them all due

Du Pont

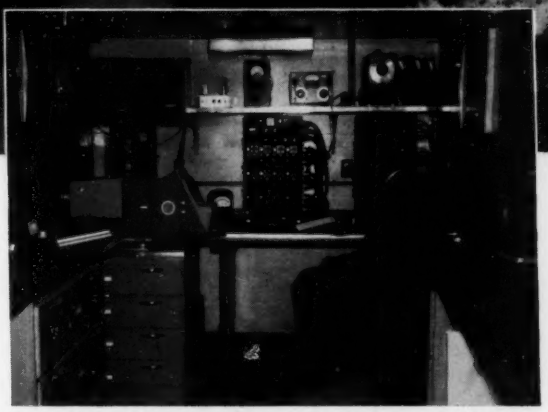
One of the world's largest non-atomic blasts, this 1958 explosion used 2.7 million pounds of blasting agent to blow up Ripple Rock off British Columbia. Submerged peak had sunk 120 ships.

care will be used to prevent damage to their homes and other property. They also measure or photograph any existing defects and call the owner's attention to them as tactfully as possible.

When the blasting is completed, the engineer retraces his path to confirm that no damage occurred, and to apologize for any inconvenience the blasting may have caused.

"It's the best method we have found yet to reduce complaints and head off lawsuits," reports one insurer.

All the psychology in the world won't work, of course, if the blaster gets careless and blows rocks through somebody's roof. In that case,



Engineers from the U. S. Bureau of Mines measure vibrations from a quarry blast in Ohio as the first step in a three-year project financed partly by insurers. They hope to work out a more exact formula for determining safe blasting distances.

U. S. Bureau of Mines

there's no argument about the source of the damage, and the contractor's insurer tries to settle the claim equitably and quickly.

Claims based on alleged damage from vibrations are much more frequent and troublesome, however. The startling noise of a nearby blast, coupled with the layman's natural fear of explosions, often leads to some wildly exaggerated estimates of the damage he believes his property has sustained. Actually, there is no direct relationship between blast noise and blast damage. The noise of an explosion, like thunder, usually does no more than rattle the windows.

Ground vibrations are potentially more capable of causing damage, but they too are vastly over-estimated. A modern building can withstand far more stress than commercial blasting usually produces.

Mutual Inventions Aid Blast Research

Mutual insurance has contributed a great deal to our knowledge of these vibrations and how to keep them under control. A mutual engineer developed a machine to measure them accurately more than 20 years ago, and has worked out formulas for determining how much explosive can safely be used without endangering nearby property.

His device, called the accelerograph, records blast vibrations as a set of wavy lines on a roll of photographic film. By placing the machine near the exposed property and setting off test shots at the blasting site, insurance engineers and vibration damage consultants can figure out the maximum amount of powder that can be safely detonated at one time. Blasters also are well advised to make vibration recordings on all explosions in hazardous places and to keep a record of the amount of powder used. This has helped disprove many unfounded claims.

Wide World

A dynamite explosion leveled downtown Roseburg, Oregon, one year ago this month when an explosives truck was engulfed by flames from a building fire. Truck had been left unattended.

Insurance safety engineers helped design a standard blasting log for contractors, and the insurance industry is currently supporting a three-year research project conducted by the Bureau of Mines to find out even more about the effect of blast vibrations. The major powder companies, through the Institute of Makers of Explosives, also have done an enormous amount of work to make the use of dynamite safer. One of their best campaigns has been to warn the public against careless handling of blasting caps —small metal cylinders about the size of a .30 caliber rifle shell, which explode with great force to set off the sticks of dynamite.

One interesting and extremely useful discovery made recently is that blast hazards can be reduced by using what is called short-interval delay blasting. By setting different holes to fire a few thousandths of a second apart, the blaster can produce the same explosive force as if he had set all the explosives off at once. The ground vibrations produced, however, will be

Blasting agents are much less sensitive than dynamite, can be stored and transported with greater safety. Here is one of 25 carloads used in a single blast at Promontory Point, Utah.

Du Pont

One blast kicks out 25,000 tons of sandstone at a quarry in Missouri. Explosives are loaded in vertical holes 55 feet deep along the rim and set off all at once with electricity.

Atlas Powder Company

Kemper Insurance

This roadbed was dug with dynamite near Akron, Ohio, without damage to the new high school only a few feet from the brink. Use of delay blasting, vibration measurements and other techniques has drastically reduced blast hazards in recent years.

very little stronger than those created by each small shot.

Road builders and other contractors often use delay blasting to control flying debris as well. In constructing a sewage disposal line in Pennsylvania, for example, the contractor had to blast within 10 feet of homes in a number of places. He was able to do so safely by setting off the powder in the top of the holes first and by using progressively longer delays in the lower decks. Another technique now widely used is to dig trenches in crowded places by drilling blast holes in a straight line and setting them off one by one. Instead of flying upward, the debris kicks backward into the open trench. Sometimes flying rock also is controlled by placing woven rope or steel mats over the blast holes.

Early Explosives Were Used Solely for War

Blasting techniques and blasting safety have come a long way since man first began to use explosives as a substitute for muscle. One of the earliest discoveries was Greek fire—a Byzantine concoction of sulfur, rosin, pitch and saltpeter that was cooked up in vats and siphoned into enemy galleys as a form of crude chemical warfare. Black powder, said to have been discovered by the Chinese in ancient times, was used chiefly as gunpowder until the 17th century, when man first turned explosives to peaceful purposes by using it in the mines of Hungary and England.

The first recorded use of blasting in this country was in 1773, when a Connecticut copper mine was enlarged for use as a prison. By the turn of the century, however, black powder began to be consumed in large quantities to dig canals and build the railroads that knitted the young nation together. Bickford's invention of the safety fuse in 1831 extended its use and improved its safety record.

It was in 1846 that Italian chemistry professor Ascanio Sobrero discovered the explosive properties of nitroglycerin—an event which ultimately was to push black powder into obscurity. It was treacherous and unpredictable in the early days, and at first was used chiefly as a heart stimulant. Then, in 1863, Alfred Nobel of Sweden mixed nitroglycerin with a porus earth called kieselguhr to form a tan, greasy material he named dynamite—meaning "strength" and "power."

Today there are several thousand types of explosives for highly specialized uses, but they generally fall into the categories of dynamites and blasting agents. The latter are less sensitive than dynamite, since they are based on ammonium nitrate and contain no nitroglycerin.

All must be stored, transported and used with extreme care, for all explosives are lethal stuff indeed if they explode in the wrong places. A tragic example was the truck load of dynamite and blasting agent that exploded from the heat of a building fire one year ago this month on a downtown street in Roseburg, Oregon. Thirteen persons were killed, 125 injured, and $9 million in propery was destroyed.

The insurance industry is now working to prevent similar tragedies by urging the adoption and enforcement of better state and local codes for the safe handling and storage of explosives.

Mutual insurance in particular—through its engineering, research and on-the-job vigilance—intends to do its share to keep even tighter reins on this powerful but hazardous workhorse of industry. ⊙

WHO PAYS

FOR STUDENT INJURIES?

In some states nobody does unless parents and pupils have their own protection.

AMERICA'S FREE public schools are one of the glories of a democracy, yet many of them are still operating under a legal doctrine based on the divine right of kings.

In practice this means that pupils injured at school often have no financial protection whatever, despite the great strides that have been made in the past 15 years to develop low-cost insurance for both the institution and the individual student. School boards in some states are actually prohibited from providing this protection on grounds that they are immune under the law from all liability for accidents. Hence spending school funds to pay for injuries either directly or through insurance would be an illegal waste of the taxpayers' money.

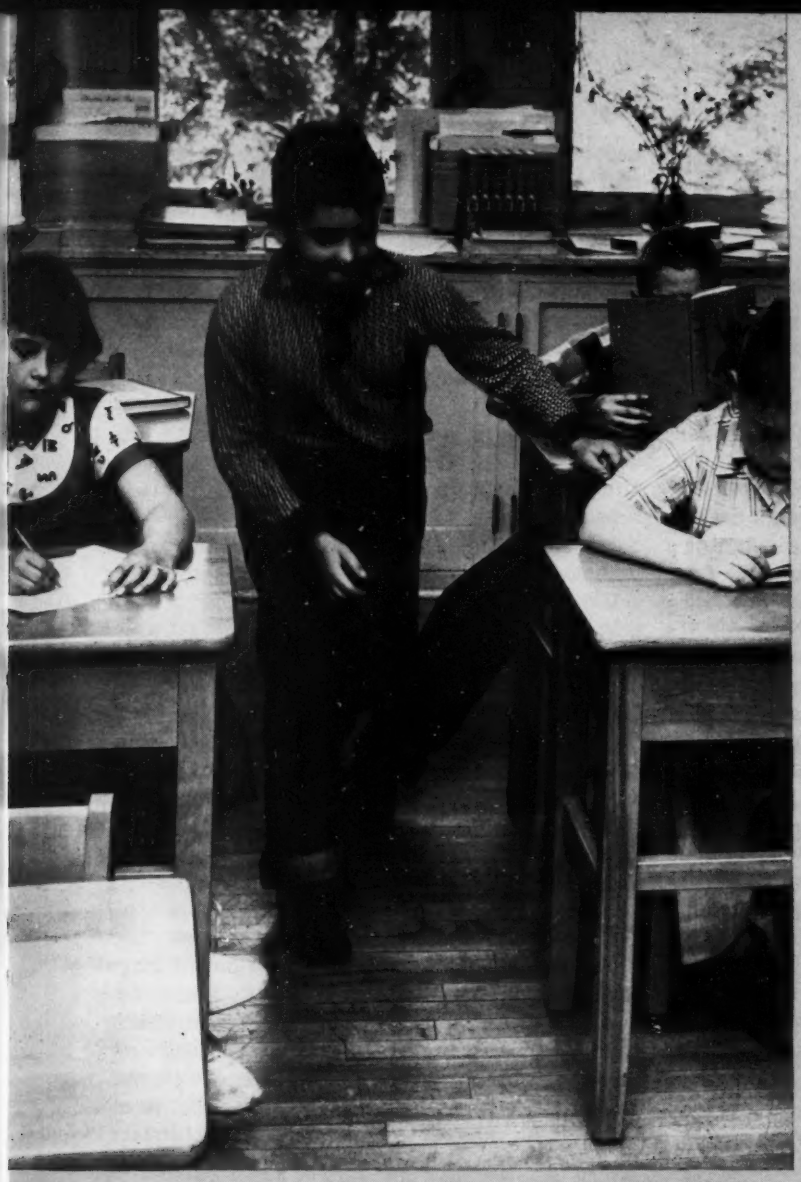
This legal inequity persists, despite strong criticism by many judges and school officials, on its sheer antiquity. It is based on common-law reasoning dating from the Middle Ages in England when kings justified their absolute power as a commission from the Almighty. "The king can do no wrong," so the argument went, and the government as an agent of the king was equally infallible. State and local governments today still use this curious theory, and cannot be sued without their consent. School boards are also immune from suits, since they are governmental bodies.

Fortunately, a great deal of progress has been made in recent years to give school children more protection despite this outdated legal tradition. California, New York, Washington and Illinois have tackled the problem directly with laws or court decisions that clearly make school districts liable for injuries to their pupils and the public.

Several other states have made limited attempts to abridge the immunity of schools, particularly with respect to the operation of school buses. With an estimated 11.7 million pupils

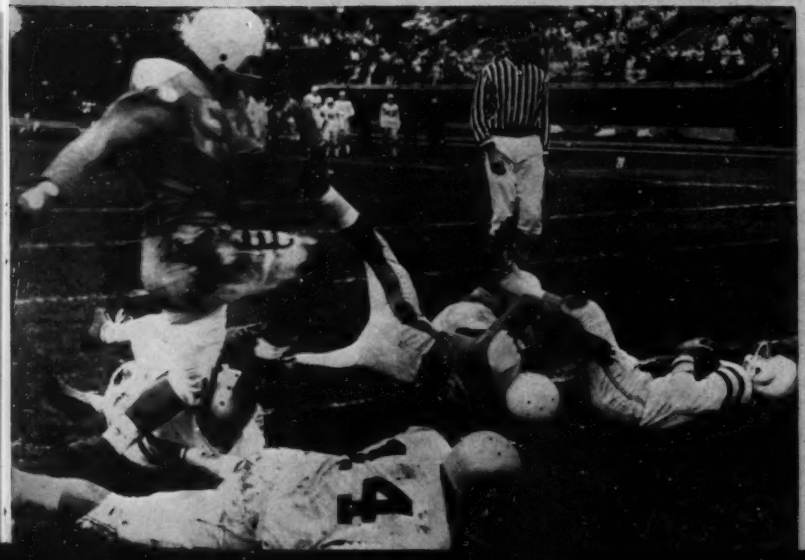
Schools in most states carry liability insurance on buses, but some are still forbidden to provide this protection because they are legally immune from liability suits.

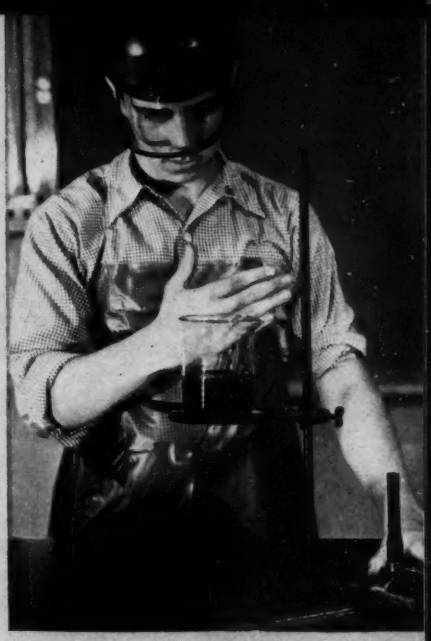
One out of five high school injuries is caused by football, yet team members can get insurance protection for $10.50 a year under a typical mutual company's group plan.



Typical school with 1,000 students will have a pupil injured every 10 days. Whether school has insurance or not, a student accident policy will pay most medical and hospital expenses.

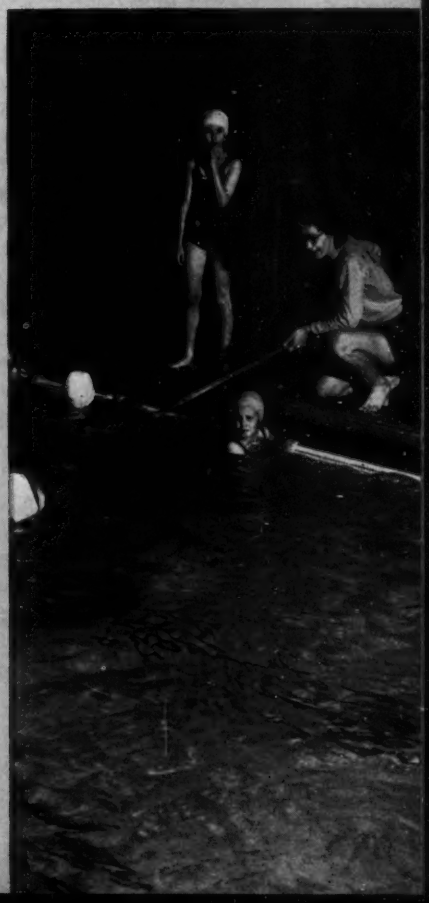
National Safety Council Photos





Protective equipment and good supervision have kept accident rates low in science labs, despite fire, explosion hazards.

Teachers, coaches, bus drivers and other school employees can be held liable for negligence, and need to carry insurance even if the school is immune.



now riding 168,000 buses every school day, this activity presents some sizable hazards for the nation's school-age population. Last year alone, 56 students were killed and 2,039 injured in bus accidents.

Twenty-two states now require that liability insurance be carried on all publicly-owned buses, and another 21 states permit school boards to buy such insurance if they wish. These policies pay for injuries caused by the bus driver's negligence during any part of the ride, including loading and unloading. Some states provide for covering pupils only; others include injured members of the public as well.

Equally important, though often neglected, is insurance against all the hazards that exist at the school itself, which collectively account for 91.6 per cent of all student accidents. Most of these hazards can be covered quite economically by comprehensive general liability insurance, which pays for injuries resulting from negligent acts or unsafe conditions wherever the students are engaged in official school activities including those in workshops, playgrounds, laboratories, classrooms, lunchrooms and even on field trips. A typical policy, issued by a mutual insurance company to a school in Illinois, costs the school board nine cents per pupil for the regular nine-month school term. Night sessions and summer school classes can be covered for half that rate. Auto and grandstand coverages cost an additional premium based on the hazards.

When state legislatures decide to authorize the purchase of liability insurance of any kind, they often set the amount as well, and stipulate that the school's liability will be limited to the amount of the insurance. In Illinois, for example, the limit is $10,000. But in New York, where schools have unlimited liability just as private businesses, school boards exercise their own judgment as to the amount of insurance.

No School Is Liable for All Mishaps

One of the shortcomings of all liability insurance from the student's standpoint, of course, is that it covers only injuries or property damage resulting from someone's negligence. It is not intended to cover pure accidents, as when children fall down while playing tag or trip in the hallways. Even in organized athletics, which account for two out of five school injuries, the majority of mishaps result from the inherent hazards of the game and would not be covered under the school's liability policy.

One increasingly popular solution to this protection gap is the student accident policy—a low-cost form of health and accident coverage that can be written on athletes alone or on the entire student body and members of the faculty as well. One widely-sold policy of this type provides $3,000 in accident coverage to pay for doctor bills, hospital expenses, nursing services, and up to $100 worth of dental repairs made necessary by accidental injuries. Students are covered at school, while traveling to and from school, or while participating in school-sponsored activities anywhere, even after regular school hours.

The cost is only $2 a year for grade school pupils, $3 for high school students and $2.50 for group policies covering some of both. Although all intramural sports are covered at this rate, interscholastic football costs more because of the additional hazards involved. Students trying out for the team can be insured for an additional $3.25, and regular team members pay an extra $8.50 per season.

PTA's Sponsor Many Group Insurance Plans

Team coverages often are paid for out of gate receipts or student athletic funds, but insurance plans for the entire student body are most often financed by parents. Insurance companies are able to offer such policies at low rates because the job of collecting the many small premiums is usually handled by home room teachers, under the sponsorship of the school or parent-teacher associations. A few schools include the cost of student accident insurance as part of a special activities fee so that all pupils are automatically covered. As one school administrator put it, "We felt that we had a moral obligation to our students to provide protection against accidents, even though the school as such had no liability. Since we couldn't legally buy insurance from school funds, our answer was group coverage on a voluntary basis."

These individual policies do not eliminate the need for a more modern concept of our schools' financial responsibilities to injured students. But they do offer parents and school officials a way to provide a considerable amount of low-cost protection even in states where the doctrine made for kings still reigns supreme. ⊙

FROM OUR ANNALS

GREAT SEAL OF THE UNITED STATES

August 20, 1776

THREE FAMOUS AMERICANS conceived the basic idea for it 184 years ago this August. A noted American Revolutionary officer was the chief designer. It was first used to authenticate a grant of power and authority to General George Washington on September 16, 1782. Few other Americans have ever seen or held in their hands a document bearing its impress. And only the Russians are known to have used it for spying purposes, as demonstrated recently by U. S. Ambassador Henry Cabot Lodge in the U. N. Security Council.

Right now The Great Seal itself, symbol of our Nation's sovereignty, is safely encased where it has been ever since July 1, 1955, on the north mezzanine of the main State Department building in Washington, D. C., in the custody of the Secretary of State.

The seal so widely publicized in recent months by the Russian incident is an adaptation of the original that was first submitted to Congress on August 20, 1776, by a committee of Benjamin Franklin, John Adams and Thomas Jefferson. This committee had been appointed by the Continental Congress on that memorable first Independence Day, July 4, 1776, "to bring in a device for a seal for the United States of America."

When Franklin's committee presented an agreed-upon design to Congress on August 20, the problems of war were so much more pressing than the need for a seal that the report was tabled. Finally, on June 20, 1782, the design and description of the seal, by then the creations of a number of minds and hands, were approved by Congress.

Benjamin Franklin, according to the best available evidence, proposed the motto *E Pluribus Unum*—from many, one—denoting one government formed by uniting many states. Charles Thomson, then Secretary of Congress, and William Barton, of Philadelphia, are credited with assembling the best of all submitted ideas into the form of the seal approved by Congress. Barton, knowledgeable in heraldry and skilled with a pencil, was also noted for his daring capture of the British brigadier general, Prescott, in the latter's house in Newport in 1777.

Seven dies of the obverse of the seal have been cut and used for authenticating state documents. Whether the reverse of the Great Seal has ever been cut as a seal die is a matter of uncertainty, according to G. Bernard Noble, director, Historical Office of the State Department's Bureau of Public Affairs. In any case, it has never been used for the sealing of documents but has been used from time to time in the form of reproductions, notably on the back of present $1 bills.

The first die of the obverse, cut in brass in 1782, was in use as late as April 24, 1841. The earliest known document to bear the seal impress of this die, dated September 16, 1782, and on exhibit in the State Department building, is a grant of full power and authority to General George Washington to arrange with the British for the exchange, subsistence and better treatment of prisoners of war. This original die is on permanent display in the National Archives.

The seventh die, cut in hardened steel by Bailey, Banks & Biddle of Philadelphia, was first used on January 27, 1904, and is the die of the seal in use today. It is now invariably impressed upon a paper wafer affixed to the document with paste. This is done in a glass-walled room in the Department of State by the keeper of the seal using a precision-instrument press.

No law prohibits reproduction of the device for unofficial purposes, but American sentiment supports the State Department's view that the seal of the United States is a distinguishing mark of honor and may not appropriately be used in the decoration of commercial articles. ⊙

GROWTH IN U.S. INSURED P

Persons enrolled have more than doubled, benefits tripled, within a decade.

AS THE WIFE of a man in retirement said after their first helicopter flight, "You have to get above the world to see the beauty of it."

In common with that man and wife, more than 5¼ million persons in the United States have the prospect of "getting above" their ordinary workaday world by reason of their being covered by insured pension plans in force with life insurance companies at the end of 1959. Newcomers to these plans totaled 340,000 during 1959 as compared with the previous year's gain of 185,000.

Today the number of persons enrolled in such plans is more than double what it was 10 years ago, while reserves and annual incomes provided have more than tripled.

Annual retirement income provided by the 28,430 plans in effect at the end of 1959 was $2.7 billion or $230 million more than the year before. A record rise in reserves of $2 billion in 1959 brought the year-end total to $17.5 billion. Employers paid more than 80 per cent and employees less than 20 per cent of the $1.8 billion in total premiums for the year.

There were 3,150 new plans established in 1959 providing $55 million in annual retirement income. Both of these items were greater in 1959 than in 1958. The total number of persons covered by the newly established plans was less in 1959 than in 1958, reflecting the smaller average size of the groups covered by the new plans.

Group annuities, first introduced in the early 1920's, now account for the retirement protection of four out of every five persons on the rolls of insured pension groups. Group annuities of the conventional type—deferred annuities—accounted for almost one-half of the number of persons under insured pension plans in 1959 and for almost two-thirds of total reserves. Marked growth has been shown, however, in the newer type of group annuity, the deposit administration plan, which accounted for almost one-third of all persons enrolled in insured plans in 1959 as against only one-twentieth in 1949. ⊙

		Deferred annuity group annuities	Deposit administration group annuities	Individ policy pensio trusts
NUMBER OF PLANS	1949	2,250	50	7
	1959	5,250	2,530	17
NUMBER OF PERSONS COVERED	1949	1,810,000	120,000	320
	1959	2,540,000	1,640,000	670
RESERVES Millions of Dollars	1949	$3,550	$ 200	$
	1959	$11,200	$2,750	$
PREMIUMS AND CONSIDERATIONS Millions of Dollars	1949	$ 545	$ – 15△	$
	1959	$ 895	$ 390	$
ANNUAL INCOME AT RETIREMENT Millions of Dollars	1949	$ 490*	$ 20*	$
	1959	$ 1,340*	$ 385*	$

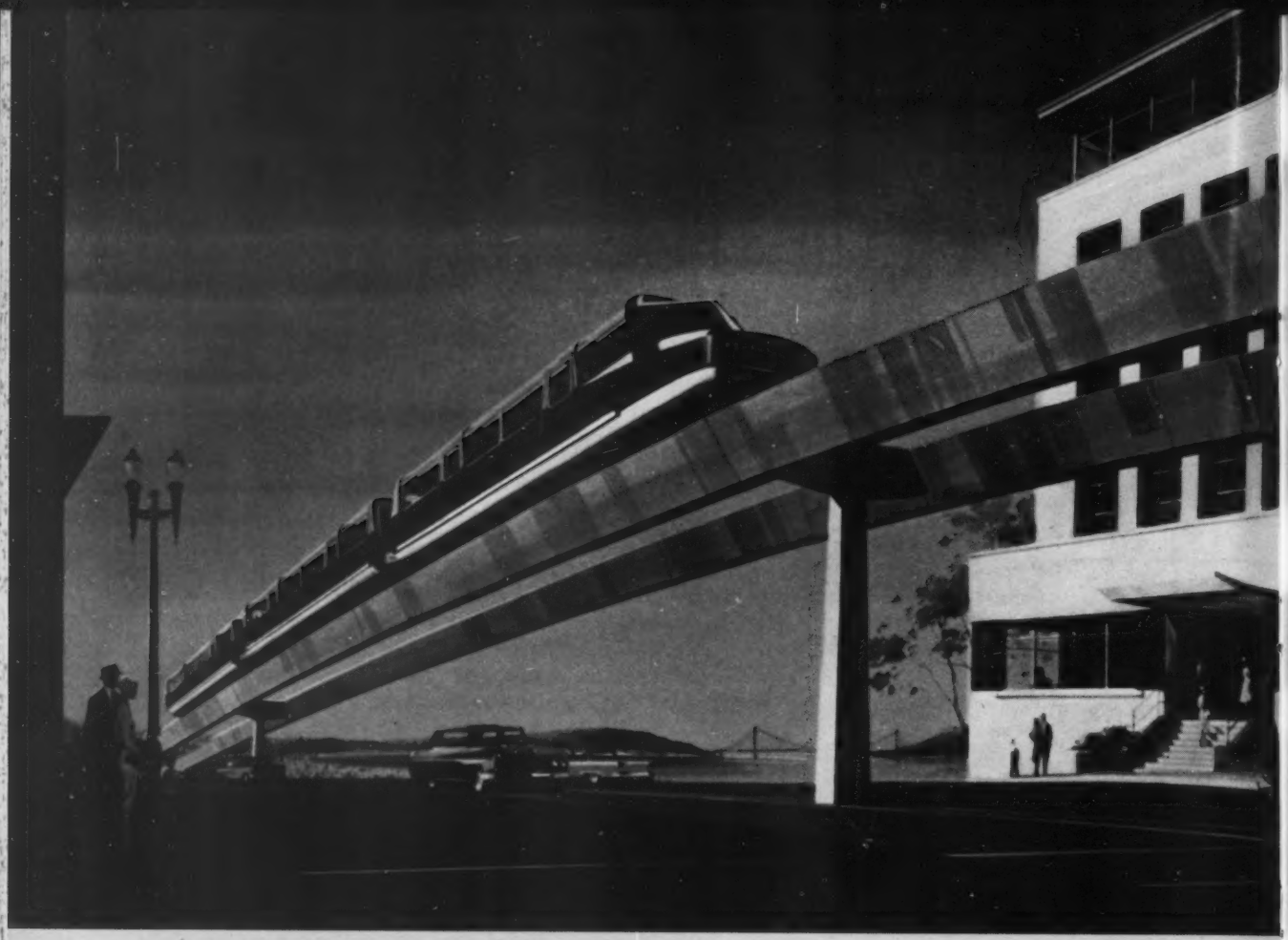
D PENSION PLANS

Chicago Helicopter Airways

sit nistration ties	Individual policy pension trusts	Other plans	TOTALS
50	7,330	1,040	10,670
2,530	17,870	2,780	28,430
20,000	320,000	155,000	2,405,000
40,000	670,000	415,000	5,265,000
$ 200	$ 525	$ 525	$4,800,000,000
$2,750	$2,050	$1,500	$17,500,000,000
$ – 15△	$ 145	$ 65	$ 740,000,000
$ 390	$ 300	$ 180	$ 1,765,000,000
$ 20*	$ 240**	$ 105**	$ 855,000,000
$ 385*	$ 645**	$ 295**	$ 2,665,000,000

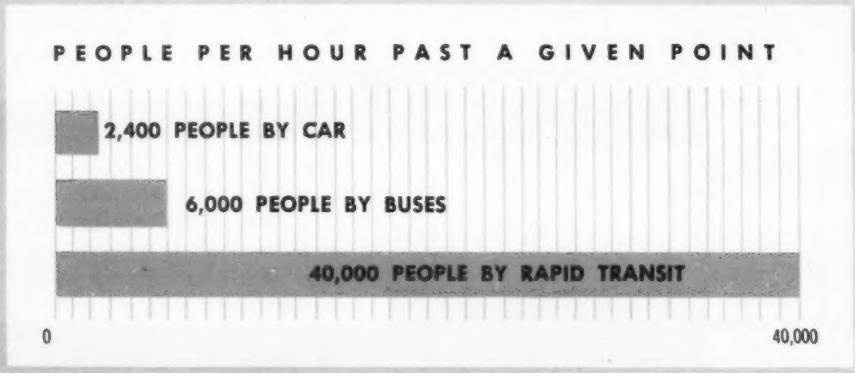
△Owing to transfer of one large plan to noninsured basis.
•Amount paid for to date.
••Total annual income to be provided at retirement.

Source: Institute of Life Insurance



Supported duorail, the transit system shown in this artist's sketch, is the "yardstick" for cost and operations studies in drafting a detailed plan for interurban rapid transit in the mushrooming commuter community around San Francisco Bay. Electronically controlled trains would carry 750 persons.

Bay Area Rapid Transit District Photos



Proponents of the San Francisco rapid transit plan point out that a single rapid transit rail is 20 times as efficient as a freeway lane in moving people past a given point. Even at non-rush periods, a freeway lane can move only about 2,400 passengers per hour. Congestion diminishes freeway capacity.

A modernized transit system for the San Francisco Bay Area is on the drawing boards.

NO MORE

COMMUTERS' NIGHTMARE

WITHIN FIVE OR SIX YEARS harassed commuters in a five-county area around San Francisco will be able to leave their automobiles at home and "ride now, pay later" on ultramodern rapid transit trains.

Air-conditioned electric trains will be automatically dispatched from modern stations in outlying suburban areas and run quietly at 80 mph on high-level rails until they reach the urban area where they will swoop underground. By various routes some will pass over and others run under San Francisco bay.

Trains running under the bay will operate in a four-mile tube designed to withstand temblors as severe as the shearing stresses of the San Francisco earthquake of 1906.

This bold plan for relieving auto-choked roads in the San Francisco metropolitan area has been proposed by the San Francisco Bay Area Rapid Transit District (BARTD), a special purpose agency created by the California state legislature in 1957. The 16-member board, appointed by supervisors and mayors in San Francisco, San Mateo, Alameda, Contra Costa and Marin Counties, is empowered to tax and condemn property to solve the commuter crisis.

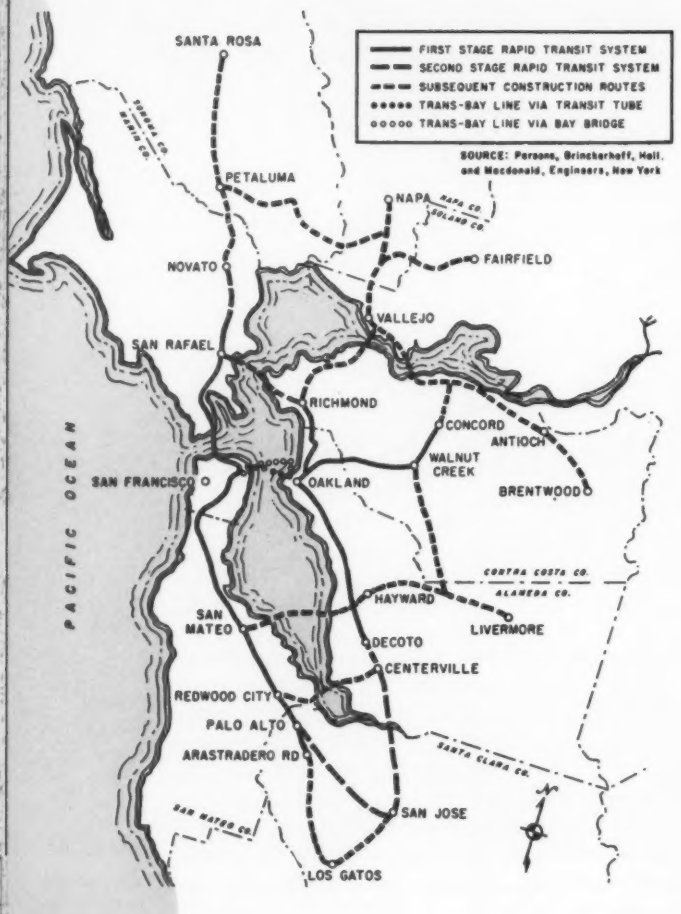
The legislature acted in the face of growing traffic problems along highways and freeways surrounding the Bay Area, problems severe enough to produce ulcers during the 20 hours each week when commuters are on the move. Recent surveys disclose that there are presently 1,085,000 automobiles in the five-county district, a figure that is expected to rise to 1,530,000 by 1970 and to 2,056,000 by 1980. State highway officials despair at providing sufficient roadways, bay crossings and parking facilities for the multiplying motorcars.

"These facts," said a recent BARTD report, "point inevitably to greater traffic congestion, more accidents, higher insurance rates and greater loss of life on our highways. An effective rapid transit system should tend to relieve these traffic pressures materially."

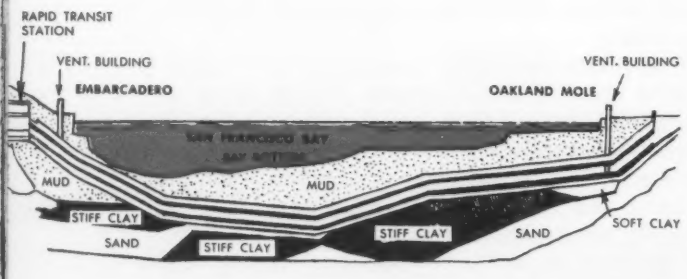
The report forecast sharp reductions in automobile insurance bills of many commuter families who will be able to save as much as 45 per cent on the lowest rated class of auto insurance by using rapid transit to get to and from work. About 35 per cent of insured autos in the Bay Area are used for commuting, a fraction that will become smaller when the transit system is a reality.

By reducing traffic congestion, the report went on, the transit system will do much to reduce auto insurance claims, perhaps as much as the combined effect of driver education classes, law enforcement, improvements in traffic and highway engineering and improved safety features built into automobiles.

San Francisco's traffic situation during rush hours is already so bad that one commuter-motorist carries homing pigeons in his car to get messages out of traffic jams. Many other



Suggested routes of the regional rapid transit plan fan out from the central city to suburban communities in a vast five county area. Golden Gate bridge, freeway median strips and abandoned railroad lines would be used to carry tracks of the system. Lines may be in operation by the end of 1965.



Subaqueous tube to carry trains beneath San Francisco Bay is to be planned on the basis of geophysical testing of soils, rock formations and seismic vibration readings under the bay.

No More Commuters' Nightmare

commuters have formed clubs to charter buses or buy station wagons to get to work in groups.

But these private solutions to the commuter mess proved insufficient, even when coupled with proposals to improve services of the San Francisco Municipal Railway, which operates streetcars, buses and the famous cable car system.

One unified interurban rapid transit system was decided upon by BARTD as the best means of carrying commuters to and from urban San Francisco with a minimum of discomfort and maximum speed and safety. BARTD's General Manager John M. Peirce points out that a two-track rapid transit line can carry as many persons as 30 lanes of auto freeway. "By eliminating the need for additional freeways in this area," he said, "the rapid transit system will contribute to travel safety."

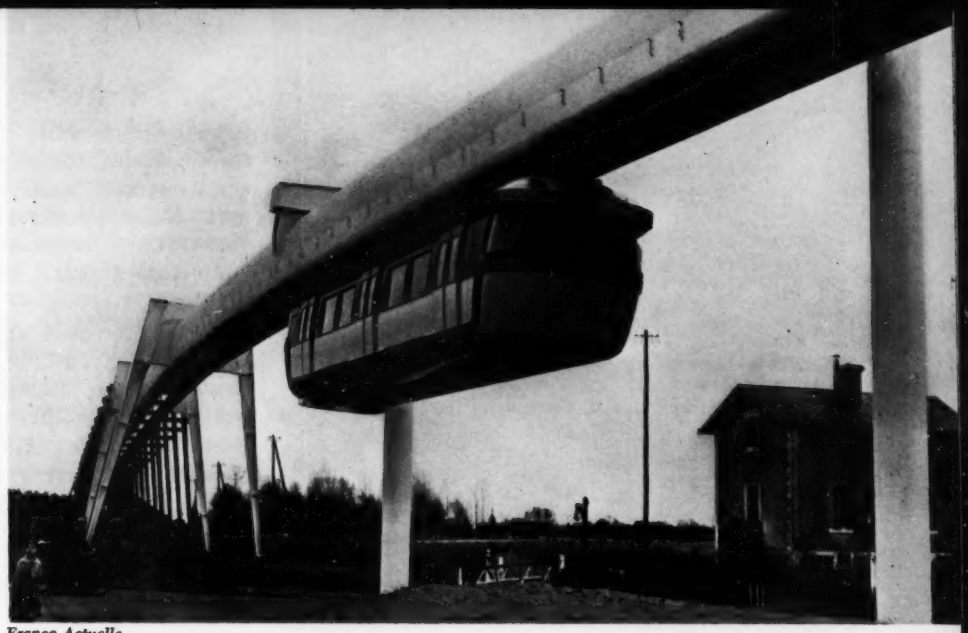
Progress Being Watched by Other Cities

A unique challenge confronts Bay Area officials in choosing between a dozen or more rapid transit systems of both monorail and duorail, supported and suspended types. Because the system will be entirely new, it need not conform to existing rolling stock or trackage. Therefore, BARTD may make its decision unfettered by past mistakes and base its choice on scientific engineering studies of construction requirements, costs, safety factors and functional city and area planning.

San Francisco will be the testing ground for many transit innovations, regardless of what basic design is chosen. BARTD's decision and reports on the effectiveness of the system in actual operation are awaited with interest by city planners and transit officials throughout the nation.

They will be watching from New York, where 80,000 people must pass through a single subway station during one morning rush hour; from Detroit and Houston, where transit officials have already considered monorail systems; from Philadelphia, where the Pennsylvania and Reading Railroads cannot serve all of the new suburbs; from Los Angeles, where a fantastic network of freeways isn't doing the job.

The San Francisco experience will be especially important to smaller metropolitan areas such as Omaha, Minneapolis, Dallas, Oklahoma City,



San Francisco's Mayor George Christopher rode this French experimental monorail system during a recent visit to the Continent. Monorail, though untested in actual operation, is being considered for use in the Bay Area because it takes little ground space.

France Actuelle

Seattle and Portland where commuter crises are expected to spring forth during the next two decades. Unified rapid transit may become a necessity for dozens of U. S. metropolitan centers.

Modern features of the proposed $800 million to $1 billion Bay Area system that will be watched are:

¶A track system of 130 miles of aerial or elevated lines, 27 miles of subways, tunnels and tubes, and 35 miles at ground level. Whether monorail or duorail, the system will provide absolute safety, low maintenance cost and virtually noiseless operation.

¶Electric trains, up to 10 cars in length, that will be operated automatically by an electronic "brain" located in the central office of BARTD. The "brain" will dispatch trains at 90-second intervals during rush hours, but an attendant will be assigned to each train for added safety. Cars will be roomy, air-conditioned, strongly-built. Full-length trains will carry up to 750 seated passengers.

¶"Ride now, pay later" arrangements under which a commuter will carry a "charga-plate" card to be inserted into a turnstile that will pick up his charge number with an electronic eye and admit him to the platform. Charge cards to be presented to agents will also be issued to commuters who prefer to pay at the end of the month. Old-fashioned riders will be able to use tokens or pay their fares in cash.

Even these modern aspects may be overshadowed by technological advances made before the proposed system is submitted to district voters next year. Firms bidding for the contract indicate that they will continue to refine their plans until the day that work starts.

Vast power requirements of the system will be met initially by existing hydroelectric plants, but conversion to atomic power stations is contemplated when nuclear power becomes commercially competitive.

Monorail Studied by Mayor Christopher

San Franciscans are eagerly anticipating comfortable, safe interurban transportation, a feeling reflected by their Mayor George Christopher, who spent several hours riding an experimental monorail system during a recent visit to France.

Although the monorail was only one mile long, Christopher observed that it is "capable of possibilities when it is completed.

"It was, of course, comparatively noiseless in view of its rubber-tired wheels and guides, and to me at least appeared more suitable for interurban traffic rather than urban transportation.

"I say this because there is great reluctance in San Francisco and other metropolitan cities to install an overhead system within the city proper. Many of our officials fear that it would cause blight and become unsightly in operation; however, I perceive no similar objection should this system be installed in interurban routes, especially if there is adequate planning to assure construction in the less congested areas."

San Francisco's first citizen's role as a strap-hanging astronaut may foreshadow the day when his constituents will ride the nation's most advanced rapid transit system. ⊙

World's "shark belt" extends from 40° north to 40° south latitude. Authenticated shark attacks have taken place in this belt, but most attacks on man are in tropical waters.

YOU CAN'T TRUST A SHARK

But scientists are now on a world-wide quest for repellents and safeguards to protect people.

SCIENCE MAY SOON provide protective insurance for hapless swimmers, fishermen and disaster victims who face the terror of hit-and-run attacks by sharks. But the erratic, unpredictable behavior of "man-eating" sharks makes the search for safety difficult.

Undeterred, a newly organized Shark Research Panel of the American Institute of Biological Sciences is now engaged in the first international effort to gather facts about shark attacks and find defenses against the ferocious fish.

Perhaps the most reassuring fact now known is that only a score of 350 varieties of sharks have been identified as attackers of man. Dangerous species include the great white shark, mako shark, mackerel shark, lemon shark, tiger shark, Lake Nicaragua shark, dusky shark, white-tipped shark, sand shark and the hammerhead.

There have been approximately 70 authenticated shark attacks in waters around the continental United States since the turn of the century and another 20 in the vicinity of the Hawaiian Islands. During 1959, a preliminary count shows, there were approximately 40 confirmed attacks throughout the world, about a dozen of them fatal.

But, as one shark expert darkly observes, "When sharks are successful, they leave no evidence."

The number of missing swimmers and sea disaster victims who have fallen prey to sharks cannot be estimated, but it is certain that many have been devoured—alive or dead—by voracious sharks. Human remains found in the bellies of captured sharks indicate that the death toll may be far greater than available statistics prove.

It is small wonder then that little solid evidence has been gathered about the habits and habitats of the shark species known to attack man. In the absence of scientific knowledge, a great mythology about shark attacks has been built by popular writers and tellers of sea tales.

Some contend that the risk of shark attack is no greater than the chance of being struck by lightning. Others frighten their audiences by claiming that sharks are an ever-present threat under all circumstances in salt water oceans and seas and rivers around them. Actually, neither attitude is supported by the facts, though special conditions make shark attacks more likely.

Ichthyologists know, for example, that sharks have highly developed senses of smell and hear-

This nasty-looking fish is a sand tiger shark, one which has not been positively identified in attacks on humans. Remoras, or shark sucker fish, hitchhike on its underside.

Marine Studios Photo

Graceful lemon shark, one of the most common species, is also among the most dangerous to man. The lemon, tiger, white-tip and blue sharks are of the "requiem" family.

Marine Studios Photo

ing and are guided to their prey by scent and sound. The eyesight of sharks is poor and adapted to dim light.

Blood, which sharks can sense at a great distance, drives the frightening fish into a frenzy. The presence of blood in the water is known to provoke sharks to attack man and sometimes turns sharks into cannibals. One shark, badly mutilated in undersea combat, even devoured parts of himself after sensing blood.

Scientists therefore advise swimmers to leave the water if they have open wounds, and fishermen are cautioned not to trail bleeding fish from their boats. Crash survivors during World War II had to be careful of the blood of injured companions and to conduct all burials from rafts and lifeboats under cover of night, as soon as possible after death occurred.

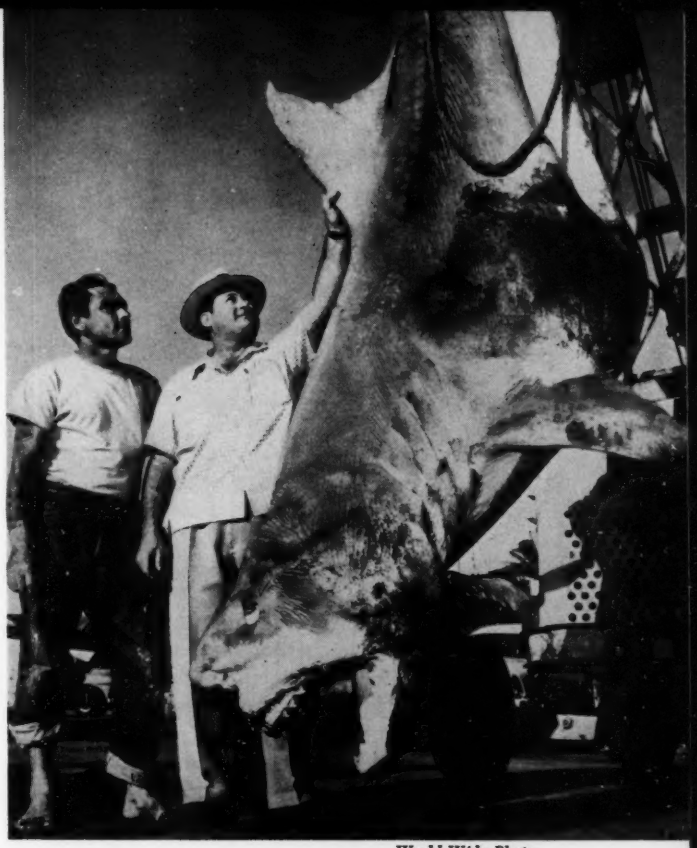
Debris found in the stomachs of sharks proves them to be scavenger fish attracted by garbage and vomit, which should also be avoided by water-bound men in shark-infested waters.

"Rogue sharks," or those dangerous to man, may be only 3-4 feet long, but others grow to 40 feet long and weigh as much as a ton. Fortunately the two largest species—the whale and basking sharks—are plankton feeders uninterested in nourishment from human flesh. All "man-eating" sharks are equipped with several rows of serrated teeth, so sharp that their human victims sometimes feel no pain when sharks take substantial bites.

The world's "shark belt" lies between 40° north and 40° south latitude, an area that includes U. S. coastlines as far north as northern California and New York City. But shark attacks are most likely (and most ferocious) in tropical and subtropical waters warmer than 65° Fahrenheit. Sharks are known to inhabit arctic waters as well, and shark attacks might occur more often in colder climates if swimmers, skin divers and fishermen entered the water.

Regions of frequent shark attacks are Australia, the West Indies and South Africa, where 23 attacks on man (11 of them fatal) were recorded from 1940 to 1952. In Durban, South Africa, the danger to swimmers became so great in 1957 and 1958 that anti-shark nets were installed at bathing beaches, an effective deterrent that costs the city $50,000 a year.

California swimmers have been the victims of several highly-publicized shark attacks during early summer months of the past three years. On the East Coast shark attacks are most common during July and August, the period when beaches are most crowded.



World Wide Photo

A 1,200-pound tiger shark, one of the species most dangerous to man, hangs harmlessly after being caught near Hawaiian island of Oahu. This 13-footer is big for a tiger shark.

Electronic protection for swimmers and divers is provided by this electrode shark repeller with pistol grip. Pressure on trigger sends an electronic wave wherever the prod points.

World Wide Photo

Banded rudderfish swim ahead of tiger shark to get scraps of food when the shark feeds and to gain protection. The idea that rudderfish or remora guide sharks has been disproved.

Marine Studios Photo

You Can't Trust a Shark

This general information about shark attacks, gathered from sketchy anecdotal evidence offered by victims and witnesses, holds few clues to the nature of the fish and the conditions that whet their appetities for human beings. French skin diver J. Y. Cousteau says in his book *The Silent World*: "From the data, covering over a hundred encounters with many varieties, I can offer two conclusions: The better acquainted we become with sharks, the less we know of them, and one can never tell what a shark is going to do."

Cousteau once encountered a shark and prepared to fight for his life, only to see the shark take one frightened look, turn and swim away. On another occasion, however, the Frenchman and a companion dodged, made bubbles with their aqualungs and yelled to deter two sharks. But the sharks kept boring in, and the divers left the water just before running out of air.

George Llano, a shark expert who conducted research for an Air Force Research Studies Institute, collected accounts of 2,500 survivors of air disasters over tropical waters during World War II. Of these, only 38 encountered sharks and only a dozen suffered casualties or injuries from shark attacks.

Among Llano's collection of narratives there is conflicting evidence concerning sharks' aggressiveness, speed, excitability, courage and susceptibility to "Shark Chaser," a shark repellent developed for military use.

In the face of conflicting evidence concerning the extent and nature of shark attacks, the American Institute of Biological Sciences organized in 1958 a Shark Research Panel which catalogs shark attacks throughout the world. The panel contacts victims, witnesses, attending doctors, newspapermen and weather officials to gather as much evidence as possible about the circumstances surrounding each incident.

Photographer Ken Adams won national honors for this dramatic shot of 18-year-old Shirley O'Neill comforting dying shark victim Albert Kogler near San Francisco Bay in May, 1959.

Courtesy of San Francisco News-Call Bulletin

Members of the Shark Research Panel are Dr. Perry Gilbert, professor of zoology at Cornell University; Dr. Leonard P. Schultz, curator of fishes at the National Museum, and Stewart Springer, a prominent shark expert. By scientifically gathering shark attack evidence, the panel hopes to fit together a jigsaw puzzle that will provide practical advice for those threatened by sharks.

The panel also conducts basic and applied research on anti-shark devices and repellents to replace the World War II "Shark Chaser," now acknowledged to be "open to serious question." George Llano says the 1944 repellent's greatest value "was the mental relief and sense of security afforded the men who had it on hand."

"Shark Chaser" is a 9-ounce packet of copper acetate and nigrosine dye in water-soluble wax. The copper acetate was intended to simulate the smell of decayed shark flesh, believed to be anathema to live sharks. The dye was calculated to appear as the coloring squirted by octopi, squids, sea hares and other enemies of the shark.

Repellents Are Not Easily Developed

The search for an effective shark repellent is made more complicated because sharks are members of the limited elasmobranch family of fish, which includes dogfish and rays. Elasmobranch fish lack the bony structure of other varieties, seem to have different feeding habits and react in their own way to various chemical repellents. "Guinea pigs" are hard to find and scientists are unable to use real (and dangerous) sharks for their experiments.

Sharks, though effective scavengers in their natural habitat, are difficult to feed in captivity. Few have lived longer than a few months, but Marineland Research Laboratory in Florida kept a tiger shark alive for a year by feeding him young sharks.

Skin diver Cousteau has found the most effective anti-shark device, but it may be used only by the bravest and most agile of men. He uses what he calls a "shark billy," a stout wooden staff four feet long studded with nails that may nick the tough hide of a shark without piercing.

Those caught in shark-infested waters without courage and a "shark billy" may hope that the scientific work of the Shark Research Panel will provide protective insurance against the highly unscientific shark. ⊙

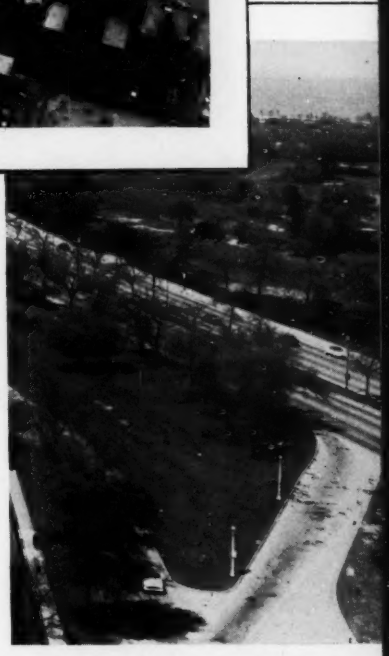
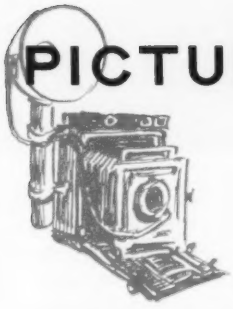


Photo evidence, now provided by professionals, sometimes calls for aerial shots of intersecting streets (top) or the sweep of a drive where a fatality occurred.



PICTURES MAKE IT CERTAIN

New techniques of professional photographers are settling key issues in damage suits.

CAMERAS IN THE HANDS of skilled photographers have become star witnesses in U. S. courtrooms, proving and disproving claims that mean millions of dollars to insurance companies.

As stakes in damage suits become higher, judges and juries are being furnished with accurate and dramatic photo evidence provided by professional photographers equipped with intricate gear. Gone is the day of case-clinching with amateurish box camera snapshots.

Photo evidence is particularly effective as a weapon against insurance cheats who claim personal injuries. Revealing motion pictures of "injured" but active claimants provide an antidote to sensational demonstrative evidence frequently presented by plaintiffs' attorneys ("Hocus-Pocus in the Courtroom," JOURNAL OF AMERICAN INSURANCE, January, 1960).

Accurate pictures are also important in reducing questionable automobile damage claims, recently estimated at $50 million a year by the Los Angeles Times.

J. Harry LaBrum, a Philadelphia lawyer and past president of the Federation of Insurance Counsel, wrote in a recent issue of *Inspection News:* "Insurers are beginning to realize that the time has now come for them to at least match the efforts of the plaintiffs' attorneys in investigation and preparation." He assailed those insurers' lawyers who are more concerned about costs than about winning verdicts.

Case preparation, according to authors of several current textbooks on courtroom procedure, includes calling in a professional photographer immediately after the first client interview.

Lou Bryk of Chicago's A-Accurate Photo Evidence service demonstrates the use of a hidden movie camera often used to expose insurance cheats. Hanging from shoulder strap, the concealed camera is operated secretly with an elongated cable release.

Pictures Make It Certain

Typical of professional cameramen who are called in is Lou Bryk, a veteran newspaper and commercial photographer and operator of Chicago's A-Accurate Photo Evidence service. Bryk's cameras, once fixed to catch gurgling babies and grinning brides, are now portable and sometimes hidden to catch the unexpected incident and the unwary person.

Trained gatherers of photo evidence are versed in traffic engineering, fire protection, medical photography and the laws of evidence.

Two-way radios used by A-Accurate send photographers to accident scenes to get pictures from several angles of the point of impact, street conditions, damage to vehicles, skid marks, obstructions and the surrounding neighborhood. These photos may be used by either party, their lawyers or insurers.

If personal injuries are involved the photographer may use sensitive color film to record the exact nature of the wounds.

Witnesses to accidents may be asked to enact before the lens exactly what they saw and where victims were standing. Such pictures establish that the witness was present and make it difficult for him to vary his story in court.

Photo evidence men also do the quiet work of establishing the condition of condemned buildings. With clear pictures the photographer documents the value of the building to its owner and those who must compensate him. Contractors, who are responsible for damage they may do in road building and other work, often call cameramen to picture the condition of structures along the right-of-way.

"Injured" insurance claimants who are not incapacitated provide the greatest challenge to gatherers of photo evidence, some of whom have trailed subjects for weeks to capture compromising scenes on film. These cases frequently involve alleged sacroiliac injuries that are difficult to detect by medical examination or X rays.

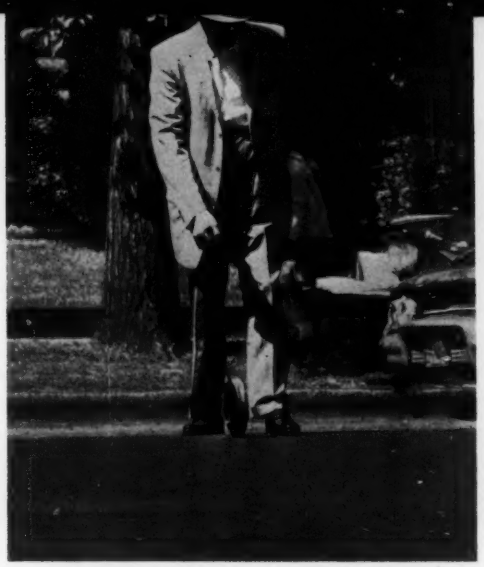
A hidden movie camera was once used by Bryk to get 150 feet of exciting action shots of a "totally disabled" claimant playing a creditable game of basketball. On another assignment he took secret shots of a "totally disabled" waitress serving customers in a hotel restaurant.

By marking negatives with day, date and time, the professional photographer helps make photo evidence speak for itself. Other techniques that make photos into star witnesses include having a witness mark his fresh recollections on a print and sign it; enlarging photos to a 1:1 ratio to give jurymen the feeling of the scene; placing identifiable objects in the scene to show size and perspective.

These techniques, Bryk says, make 98 of 100 pictures speak for themselves in the courtroom. In the other two per cent of cases the photographer may be called to testify to back up his own photo evidence. He may be asked, in addition to certifying the negative was not retouched, to tell the court about light conditions, camera positions, exposure time, distance to certain fixed objects and other details.

Attorneys for insurers have taken a hint from their courtroom opponents and now make wider use of the new and highly technical ways of gathering effective photographic evidence.

By substituting accurate, dramatic pictures for washed-out snapshots they may contribute to curing what an insurance executive called the "payola disease of ever-increasing padded and fraudulent claims" against the insurance companies and their clients who must meet higher rates. ⊙



Measuring wheel is used to check distance from curb to curb at accident scene. Surveyors are often asked to demonstrate for cameras the dip, grade and curve angles of streets and highways.

Fast action in getting pictures of damage done in collisions may prevent unwarranted claims. Skilled photographers accent the key evidence.

A portable radio case (left) conceals movie camera that may show a "disabled" insurance claimant playing basketball. Photo evidence equipment (right) includes stereo camera, 15-inch telephoto lens, press camera and a set of supplementary lenses, 35 mm camera with 135 mm lens, reflex camera for close-up work.

Paul A. Mitten, Jr., high-ranking man of the group in the Way training program, is a worthy exemplar for professional truck drivers. He plans to make fleet safety work a career.

PROS AND PROUD OF IT

Young truck drivers become skilled operators dedicated to safety and courtesy by this unique schooling.

PAUL A. MITTEN, Jr., is a short 145-pound welterweight mite of a young man. But he can put a huge 35-foot semi-trailer and truck grossing 20½ tons "on the ropes." He can, in fact, maneuver that monster straight backwards for 150 feet or more with only inches to spare on either side and put it into an unloading spot without ever taking a second hitch at it.

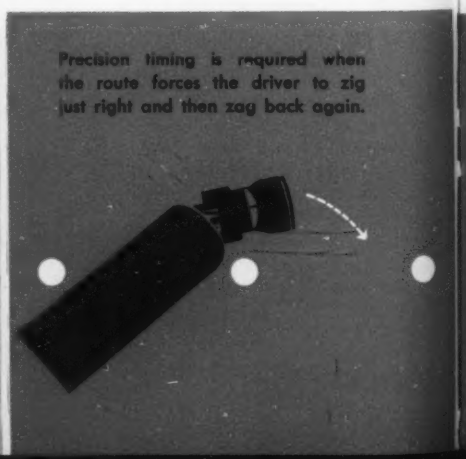
Paul and his kind are the professionals among the pilots of the 11 million trucks and truck-combinations on our highways today. Twenty-three of them qualified as such by graduating this summer from the six-week William Way Memorial Driver Training Program sponsored in the Chicago area by the Regular Common Carrier Conference of the American Trucking Association. Somewhere in the United States they are now out on the highways with their big rigs, serving in the ranks of the professional safe drivers who are especially trained, well-informed and have developed special skills based on that training and information.

Paul Mitten's "alma mater" is not the only such driver training school, but it is a top-ranking one with a distinctive origin and a creditable history of seven sessions held in Pennsylvania, Ohio, Georgia, Illinois and Indiana during the past two years. The William Way Memorial Driver Training Program was established to keep alive the memory and ideals of William Way, Jr., a motor carrier-minded professor who for years was head of the Department of Transportation at the University of Tennessee. The William Way program concentrates on the best young men to be found and offers them the best training that can be devised. The schooling is of the intensive type.

Extensively, a program of long standing is the one sponsored by the American Mutual Insurance Alliance and one of its affiliates, the National Association of Automotive Mutual Insurance Companies. In this program, engineers of the association work with fleet supervisors in the instruction of drivers to bring about improved performance. The broad field for this project is the 50,000 companies owning and operating fleets of 10 trucks or more.

The William Way program and the Alliance project expound the same basic essentials of

Five Exacting Feats All in the Day's Work of The Professionally Trained Truck Driver



professional safe driving in that the Way course makes use of 10 motion picture films produced and distributed by the Association of Automotive Mutual Insurance Companies for commercial driver training.

Benefits of the William Way program were put in driver terms by Paul Mitten when he said, "This course changed my whole outlook on driving. Before, I looked upon truck drivers as . . . well, just truck drivers. Now I know they have to be real professionals."

This emphasizing and obtaining of the proper attitude on the part of students is the main objective, according to Charles Johnston, co-ordinator of the program and an industrial training supervisor with many years of experience.

"A man drives the way he thinks. We do everything we can to straighten out his thinking. There's no room in this business for the legal-mindedness that contends, 'I had the right of way.' Through the formation of new habits and the correction of bad habits, these drivers are aided in developing acceptable skills. Conducting themselves properly when they meet the public, other buses, cabs and street cars is just as important as learning to operate the truck according to all the regulations of the ICC and the carrier. Finally, we give them a test which is an evaluation of their character and ability."

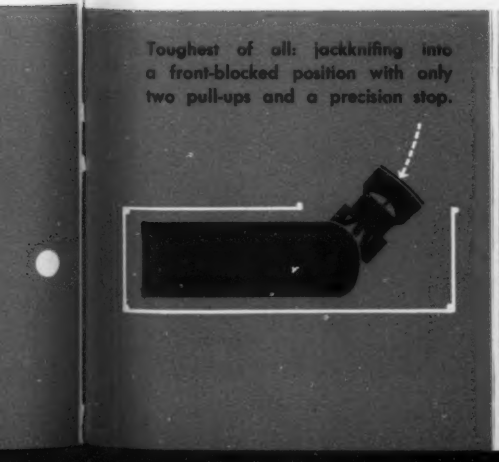
Classroom sessions and "homework" on such essentials as ICC regulations and bills of lading also include a thorough briefing on the insurance of trucks and cargoes and on the driver's responsibility both to the insured and the insurer. Especially is it impressed upon the drivers that insurance is not a substitute for safety nor a redemption for negligence or carelessness. If everybody collected as a result of carelessness or other cause, the insurance companies would be forced out of business to the detriment of both drivers and carriers. The new drivers are made conscious of the fact that they will have in their hands both equipment and cargo which they must treat as their own and thereby help their companies keep their jobs for them.

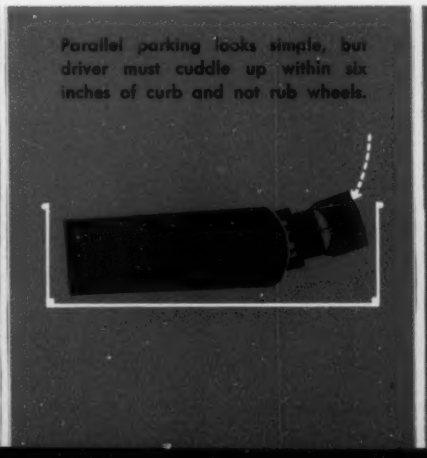
Training exercises behind the steering wheels of big "semis" and other trucks on the school grounds simulate over-the-road conditions. The two toughest of these exercises are jackknife parking and spotting at a dock after a long, straight back-in. The final event of the school is a week's driving and training trip with an experienced truck driver. During these practice runs the student drivers are insured by the American Trucking Association.

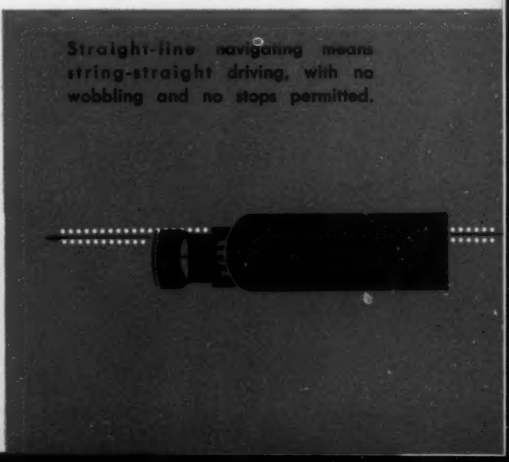
Harry L. Fisher, Everett, Pennsylvania, field instructor for the schools, is a 24-year veteran at truck driving with a total of more than 2 million miles to his credit without a single chargeable accident.

Driving such as that is what Mitten and the other William Way students aspire to emulate. Mitten, himself, is a graduate in transportation from Pennsylvania State University where his father is assistant dean of admissions. Safety and accident prevention have long been a major interest with him, but prior to the school he had never driven anything bigger than an Army 2½-ton truck. Immediately following his graduation from the school, he was employed as a driver by Eastern Express, Inc., Terre Haute, Indiana. His plans are to drive for a few years to get a stock of experience and first-hand knowledge, then do safety educational work with a motor carrier.

Mitten and the 22 other trainees in the Chicago school were sponsored by nine different motor carriers. Young men may enter on their own, but most William Way students are carrier-sponsored. The attitude of the industry—and a fitting testimonial to the school—was aptly expressed by one truck-transportation executive who said, "When you see and meet and talk to the type of men receiving this training, you realize its true value for our industry." ⊙







Roadblock is set up through the teamwork of Rangers and state police. Ranger plane circles for advance spotting of auto.

TEXAS RANGERS:

Rangers cross muddy river bed while tracking outlaw through Texas hill country. Each man must purchase his own horse.

One of the world's finest crime fighting units is just 52-men strong.

LAWMEN SUPREME

HOW CAN SO FEW do so much is a question often asked by law enforcement experts about the oldest and one of the smallest state policing agencies—the Texas Rangers.

Long in heritage but short in man power, the famed Rangers organization is a tiny force of 52 men who patrol the massive Lone Star state and keep watch on its more than 9 million citizens.

Formed in 1823, when Texas was still a part of Mexico, the original Texas Rangers totaled 10 rugged cowboys whose job it was to "range" the frontier territory to protect colonists from tribes of rampaging Indians. Then, as now, the small band of Rangers was surprisingly effective.

Today's Ranger no longer fights Indians, as did his legendary predecessor, but stories of the modern-day Rangers are just as colorful. For example:

In 1955 a riot broke out in the maximum security ward of a Texas mental institution. A group of armed prisoners had already stabbed five guards when the Texas Rangers were notified.

Chief Bob Crowder, then a Ranger captain, answered the call—alone. Crowder entered the hospital yard and shouted to the ringleader:

"My gun holds eight slugs. You can take me, but I don't intend to lose. I'll take eight of you with me."

In a few minutes Crowder was collecting the prisoners' homemade weapons, while the rioters walked sheepishly out of their stronghold with their hands held high.

Crowder wasn't doing anything that each of his 51 fellow Rangers wouldn't do, had another been sent to quell the riot. In fact, the Texas Rangers like to consider Crowder's display of raw courage as "routine." The organization has a four word saying which expresses this feeling: "One riot—one Ranger."

Because of the size of Texas, compared with the size of the Ranger force, the men are accustomed to being outnumbered. Each Ranger is assigned a territory larger than the state of Connecticut. His primary duties are to protect life and property, apprehend fugitives, suppress riots and insurrection, and investigate major crimes.

Rangers last year covered more than 2 million miles by auto, 24,000 by plane, boat and train. Each man must also own a horse, and to prove that it is not just an ornament, nearly 300 horseback miles were registered by Rangers in 1959.

Although the Ranger's horse today must share its stable with airplanes, armored cars, deep-water cabin cruisers and a pack of bloodhounds, it has a purpose in the Ranger organization. Rangers still investigate hundreds of cattle thefts each year, and stage giant roundups to check herds and locate stolen livestock. Horses are frequently used to carry Rangers into the

many acres of Texas brush country on man hunts. As one old-timer explained: "A Ranger ain't a Ranger without his horse."

When Texas terrain allows, however, the Ranger prefers a faster means of transportation, such as his high-powered auto or an airplane. A horse would have been of little value to Ranger Max Westerman, Jr., who was assigned to overtake a bank robber's speeding auto. The Ranger hopped into his plane, spotted the auto, landed on the highway some distance ahead of it and arrested the bandit. Just another "routine" case told in two paragraphs in Westerman's file.

Further proof of the effectiveness of the Texas Rangers is shown in their arrest and conviction record of last year. The organization made a total of 1,219 felony arrests. More than 800 of those arrested were convicted. This is the type of record which prompts criminologists to rank the Rangers among the leading crime fighting agencies in the world.

Colonel Homer Garrison, Jr., director of the Texas Department of Public Safety which has the Rangers under its jurisdiction, credits their success to "individual initiative." Each Ranger is simply instructed to enforce the law in his territory as he sees fit. This practice, Garrison readily admits, is controversial but it gets results.

Rangers each year save Texans millions of dollars by curbing robbery, burglary, swindling, arson and fraud. Last year they located half a million dollars worth of stolen property.

Rangers are not confined to Texas, for the world is their beat. Men have been dispatched to such far off places as Brazil and northern Canada to track down wanted Texas fugitives. Large companies often request the services of a Ranger to investigate large-scale pilfering or to ride "shotgun" for a valuable company shipment. Colonel Garrison, despite the small size of his force, usually obliges.

Why do men face the rigorous mental and physical tests, the relatively small salary ($5,400 a year), the long working hours (the average work week for a Ranger exceeds 70 hours), and daily dangers to become Texas Rangers? What is the drawing power which creates a waiting list of 1,000 men while only two men have resigned from the organization since 1935?

Colonel Garrison says of his men: "They are admired by law-abiding people throughout the world and feared by lawbreakers. They sit tall in the saddle and cast a long shadow." ⊙

One of six Ranger tanks is employed by officer to rout gunman from abandoned shed. Tanks also play an important role in suppressing rioters.

Ranger prepares to search river bottom for discarded stolen property. More than half a million dollars worth of stolen loot was recovered by Texas Rangers last year.

Rangers take a short coffee break after spending a long day checking cattle brands while in search of rustlers.

Commissioner Rufus D. Hayes presides over what may be the "fastest growing major industry" in booming Louisiana.

HAYES OF LOUISIANA

LOUISIANA'S PELICAN, adept at scooping fish out of the Gulf of Mexico, also aptly symbolizes the state's business prowess. During the past 10 years, the Pelican State has embraced hundreds of new industries and is witnessing a gigantic industrial boom, with capital outlays in manufacturing facilities pouring into the state at a rate of $5.5 million a week.

The once sleepy countryside between New Orleans and Baton Rouge has been transformed into a complex of multimillion dollar industrial plants, earning the area the title of "Chemical Basin, U.S.A." Most of the huge factories are located along Louisiana's inexhaustible water supply —the Mississippi River—which meanders for 518 miles through the state.

Louisiana ranks nationally among the leaders in reserves of oil, natural gas, salt and sulphur. This combination has lured Kaiser Aluminum to construct a $70 million plant at Gramercy, 40 miles up river from New Orleans. Olin-Mathieson and Revere Copper jointly built a $55 million alumina plant at Burnside, and Esso's oil refinery at Baton Rouge is the country's largest.

These are just a few of the many giants which have recently elected to make Louisiana home. The state's next step will be to attract consumer product industries to make use of these basic and intermediary product producing installations.

Insurance Commissioner Rufus D. Hayes of Louisiana recently brought national recognition to his state when he was elected chairman of the executive committee, National Association of Insurance Commissioners, for 1960-61. During the past year he served as Zone 3 representative on the committee.

In recent years, the state's insurance business has been one of its fastest growing industries. Commissioner Hayes feels that continued growth and expansion is assured.

There are presently more than 900 insurance companies doing business in Louisiana. Of this total, nearly 200 companies are domestic and the remainder foreign. The total of premiums paid by the state's policyholders is more than $463 million, as compared with $121 million in 1946.

A graduate of Louisiana College at Pineville, Hayes went on to receive his law degree from Louisiana State University. He has engaged in the practice of law for 20 years in Baton Rouge, and served as District Attorney for the Parish of East Baton Rouge. Hayes was appointed Commissioner of Insurance in 1956. In January of this year, he became the first elected commissioner for the state, chosen by a large majority. In addition to his insurance duties, Hayes finds time to be active civically and for four years (1956-60) he served as chairman of the Louisiana State Democratic Central Committee. ⊙

Historic Jackson Square in the Mardi Gras city. Statue memorializes General Andrew Jackson, hero of the Battle of New Orleans.

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By the President: